

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A communication relay device connected to a home network, for relaying information between an outside communication device connected to an outside network and a home communication device connected to the home network, comprising:

a first copyright protection unit configured to carry out a first authentication and key exchange processing for purpose of copyright protection between the communication relay device and the home communication device on the home network;

a second copyright protection unit configured to carry out a second authentication and key exchange processing for purpose of copyright protection between the communication relay device and the outside communication device on the outside network, based on a scheme different from the first authentication and key exchange processing;

an identification information memory unit which stores an identification information of the outside communication device prepared at least on the basis of the device ID of the outside communication device uniquely assigned beforehand among all copyright protection devices worldwide; and

a bridge processing unit configured to receive an access request for the home network from the outside communication device, and carry out transmission/reception of information content that requires copyright protection between the home network and the outside network only when the identification information of the outside communication device which made the access request is stored in the identification information memory unit [[dad]] and then only when both the first authentication and key exchange processing by the first copyright protection unit and the second authentication and key exchange processing by the second copyright protection unit succeed.

Claim 2 (Original): The communication relay device of claim 1, further comprising a registration control unit configured to limit a number of outside communications devices that can be stored in the identification information memory unit to a prescribed number.

Claim 3 (Original): The communication relay device of claim 1, further comprising a registration control unit configured to prohibit a deletion of a stored identification information in the identification information memory unit.

Claim 4 (Original): The communication relay device of claim 1, wherein the identification information memory unit stores in advance at least one of a device ID for identifying the outside communication device and a physical address of a communication interface for purpose of copyright protection, before transmitting contents to the outside communication device.

Claim 5 (Original): The communication relay device of claim 1, wherein the identification information memory unit has a mode for storing a result of the second authentication and key exchange processing by the second copyright protection unit, in a state where an access to the home network is permitted to the outside communication device.

Claim 6 (Currently Amended): The communication relay device of claim 5, further comprising:

a user information memory unit which stores a user authentication information for the outside communication device; and

an authentication ~~Judgement~~ judgment unit configured to judge whether the user authentication information of the outside communication device which made the access request for the home network is stored in the user information memory unit or not;

wherein the bridge processing unit judges whether or not to permit an access between the home network and the outside network, according to a ~~Judgement~~ judgment result of the authentication ~~Judgement~~ judgment unit.

Claim 7 (Currently Amended): The communication relay device of claim 5, further comprising:

a user information memory unit which stores a user authentication information for the outside communication device; and

an authentication ~~Judgement~~ judgment unit configured to judge whether the user authentication information of the outside communication device which made the access request for the home network is stored in the user information memory unit or not;

wherein the identification information memory unit stores at least one of a device ID for identifying the outside communication device and a physical address of a communication interface for purpose of copyright protection, according to a ~~Judgement~~ judgment result of the authentication ~~Judgement~~ judgment unit.

Claim 8 (Original): The communication relay device of claim 1, wherein the identification information memory unit has a mode for storing a result of the first authentication and key exchange processing by the first copyright protection unit.

Claim 9 (Currently Amended): The communication relay device of claim 8, further comprising:

a user information memory unit which stores a user authentication information for the outside communication device; and

an authentication judgement judgment unit configured to judge whether the user authentication information of the outside communication device which made the access request for the home network is stored in the user information memory unit or not;

wherein the bridge processing unit judges whether or not to permit an access between the home network and the outside network, according to a judgement judgment result of the authentication judgement judgment unit.

Claim 10 (Currently Amended): The communication relay device of claim 8, further comprising:

a user information memory unit which stores a user authentication information for the outside communication device; and

an authentication judgement judgment unit configured to judge whether the user authentication information of the outside communication device which made the access request for the home network is stored in the user information memory unit or not;

wherein the identification information memory unit stores at least one of a device ID for identifying the outside communication device and a physical address of a communication interface for purpose of copyright protection, according to a judgement judgment result of the authentication judgement judgment unit.

Claim 11 (Currently Amended): The communication relay device of claim 1, further comprising:

a Web page production unit configured to produce a Web page describing information for controlling ~~or monitoring~~ the home communication device; and

a Web page disclosing unit configured to transmit the Web page produced by the Web page production unit to the outside network;

wherein the outside communication device controls ~~or monitors~~ transmission of content that requires copyright protection from the home communication device by using the Web page received through the outside network.

Claim 12 (Original): The communication relay device of claim 1, wherein the first copyright protection unit realizes copyright protection by adopting at least one of a provision for limiting a TTL (Time To Live) field of a packet transmitted/received between the home communication device and the outside communication device to a specific value, a provision for using a link local address in an Internet protocol, and a provision for using a Ethernet frame as a transmission packet.

Claim 13 (Original): The communication relay device of claim 1, further comprising a routing control unit configured to notify a specific port number to a connection device for carrying out a connection control for the home network and the outside network, and make a setting such that a packet transmitted to the specific port number will be transmitted to the communication relay device.

Claim 14 (Original): The communication relay device of claim 1, further comprising a routing control unit configured to notify a global IP address of the communication relay device to a connection device for carrying out a connection control for the home network and the outside network, and make a setting such that a packet destined to the global IP address will be transmitted to the communication relay device.

Claim 15 (Original): The communication relay device of claim 1, wherein the bridge processing unit also carries out at least one of a coding conversion, a protocol conversion and a bandwidth conversion for data entered from one of the outside network and the home network, and then transmits converted data to another one of the outside network and the home network.

Claim 16 (Currently Amended): A communication system, comprising:  
a home communication device on a home network;  
an outside communication device on an outside network; and  
a communication relay device for relaying information between the home network and the outside network, the communication relay device having:  
a first copyright protection unit configured to carry out a first authentication and key exchange processing for purpose of copyright protection between the communication relay device and the home communication device on the home network;  
a second copyright protection unit configured to carry out a second authentication and key exchange processing for purpose of copyright protection between the communication relay device and the outside communication device on the outside network, based on a scheme different from the first authentication and key exchange processing;  
an identification information memory unit which stores an identification information of the outside communication device prepared at least on the basis of the device ID of the outside communication device uniquely assigned beforehand among all copyright protection devices worldwide; and  
a bridge processing unit configured to receive an access request for the home network from the outside communication device, and carry out transmission/reception of information content that requires copyright protection between the home network and the outside network

only when the identification information of the outside communication device which made the access request is stored in the identification information memory unit and then only when both the first authentication and key exchange processing by the first copyright protection unit and the second authentication and key exchange processing by the second copyright protection unit succeed.

Claim 17 (Currently Amended): A computer program product embodied on a computer readable medium for causing a computer to function as a communication relay device connected to a home network, for relaying information between an outside communication device connected to an outside network and a home communication device connected to the home network, the computer program product comprising:

a first computer program code loaded in a processing unit for causing the computer to carry out a first authentication and key exchange processing for purpose of copyright protection between the communication relay device and the home communication device on the home network;

a second computer program code loaded in a processing unit for causing the computer to carry out a second authentication and key exchange processing for purpose of copyright protection between the communication relay device and the outside communication device on the outside network, based on a scheme different from the first authentication and key exchange processing;

a third computer program code loaded in a processing unit for causing the computer to store an identification information of the outside communication device prepared at least on the basis of the device ID of the outside communication device uniquely assigned beforehand among all copyright protection devices worldwide; and

a fourth computer program code loaded in a processing unit for causing the computer to receive an access request for the home network from the outside communication device, and carry out transmission/reception of information content that requires copyright protection between the home network and the outside network only when the identification information of the outside communication device which made the access request is stored in the identification information memory unit and then only when both the first authentication and key exchange processing by the first computer program code and the second authentication and key exchange processing by the second computer program code succeed.